

USSR

CHERVAK, Yu. Yu., Mat. metody resheniya ekon. zadach, No 3, "Nauka", 1972, pp 130-132

$$X = \sum_{i=1}^m \alpha_i A_i + \sum_{i \in G_1 \cup G_2} \alpha_{m+i} A_{m+i},$$

$$\alpha_i \geq 0, i=1, 2, \dots, m, i \neq s; \alpha_{m+i} \geq 0, i \in G_1 \cup G_2;$$

$$\sum_{i=1}^m \alpha_i + \sum_{i \in G_1 \cup G_2} \alpha_{m+i} = 1.$$

is introduced

Theorem. a) If the values $\alpha_{ii}, i=1, 2, \dots, m$, belong to the interval $([a_{ii}, |a_{ii}|])$, then the problem has no whole-number solution. b) The set $(V - V')$ does not contain a point X with a whole-number value of the coordinate A (and contains the point A_s). On the basis of the above exposition, the following algorithm is proposed for solving the problem. 0-th step. Among points $A_i, i=1, 2, \dots, m, m=m$, points A_s are found which satisfy condition (4). If in this process an integral point is found, the problem is solved. If not, we go on to the first step. k-th step ($k \geq 1$). Among points A_i found on the preceding step, a lexicographically maximum point A_{sk} is sought. If case a) of the theorem is satisfied for this point, then the problem has no solutions. If not, then we cal-

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CHERVAK, Yu. Yu., Mat. metody resheniya ekon. zadach, No 3, "Nauka", 1972, pp 130-132

culate new points by rule (5) and join them to those already found. Among the points $A_i, i=1, 2, \dots, m_k, i \neq s_1, s_2, \dots, s_k$ points A_g are found which satisfy condition (4). If an integral point is found, then the problem is solved. If not, we go on to the $(k+1)$ -th step. The described method can be applied for instance to the problem with a single restriction where determination of the vertices A_1, \dots, A_m occasions no difficulty. The method can also be extended to the case of conditions of discreteness (instead of conditions of integrality).

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USSR

UDC 620.194.8:678.5.05 - 419.8

CHERVATYUK, V. E., KOSTENKO, A. YE., NAKONECHNAYA, A. A., PLYSYUK, A. K.,
SHAMRAY, R. YA., and YAZON, Z. P., Severodonetsk

"Study of the Corrosive Resistance and Atmospheric Stability of Fiberglass
Produced From the Composition 311 TKhS"

Kiev, Khimicheskaya Tekhnologiya, No 2 (62), Mar-Apr 72, pp 22-23

Abstract: Fiberglass material studied was resistant to hydrochloric acid, dilute and concentrated acetic and formic acids, acetic anhydride, aniline, trichlorobenzene, toluene, and gaseous Cl_2 , HCl , and SO_2 . Prolonged usage of this material shows considerable wear due to the action of light, temperature and moisture. With aging the firmness of the plastic deteriorates at an increasing rate. The laboratory results were fully corroborated by experiments carried out in the field.

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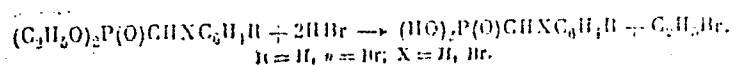
UDC 547.26'118

CHERVENYUK, G. I., and GRINEV, G. V., Chernovitsy State University

"The Effect of Bromine on Diethyl Phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyo 10, 1972, pp 2183-2186

Abstract: Diethyl phosphonates in dioxane react actively with Br in the presence of light and small amounts of water, forming benzylphosphonic acids and ethyl bromide. The reaction proceeds very slowly in the dark and not at all in anhydrous dioxane. The yield of phosphonic acids was higher when the aqueous solution of HBr was used. These acids were formed according to



Five acids were synthesized of a general formula $RP(O)(OH)_2$ where $R = C_6H_5CH_2$

(I), $P-BrC_6H_4CH_2$ (II), $C_6H_5CH(Br)$ (III), $P-ClC_6H_4COOCH_2$ (IV), CH_3CCCCH_2 (V).

The melting points of acids I-III were: $171-172^\circ$, $186-188^\circ$, $139-142^\circ$, when Br_2 was used; and $170-171^\circ$, $186-189^\circ$, $164-167^\circ$, and $142-144^\circ$ for acids I, II, III.

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CHERVENYUK, G. I., and GRINEV, G. V., Zhurnal Obshchey Khimii, Vol 42(104),
Vyp 10, 1972, pp 2183-2186

IV, and V, respectively, when HBr was used. All acids were crystalline, soluble in dioxane, ethanol, ethyl acetate, water, benzene, toluene, acetic acid, dichloroethane, and petroleum ether. The structure of the acids was verified by the number of hydroxyl groups, and IR spectra, and by preparing their Pb salts. Characteristics spectral bands for each acid are given.

2/2

USSR

UDC 678.5.06-419.8:66.085.3/.5

P'YANKOV, G. N., MOROZOV, A. V., OMEL'CHENKO, S. I., KARAKCHIL, A. M., BESSONOV, V. G.,
CHERVETSOVA, I. N., VIDENINA, N. G., DYACHOK, V. T., and GOLODMYY, YU. F., Institute
of Physical Chemistry imeni L. V. Pisarzhevskiy, Kiev, Academy of Sciences
Ukrainian SSR, and Institute of Chemistry of High Molecular Compounds, Kiev,
Academy of Sciences Ukrainian SSR

"Radiation Technology of Manufacturing Glass-Plastics"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 4, 1970, pp 8-10

Abstract: Production of glass plastics using electron accelerators as radiation sources is described. The operating principle is explained with an example of the manufacture of a cylindrical sheet of cross winding. The mandrel speed, feed pitch, and dose strength are selected so that during the time of passage of the winding section across beam cross-section the required degree of polymerization of the binder is attained. The degree of polymerization between layers wound on top of each other is regulated by the energy of the impinging radiation and beam current. The source of fast charged particles in the model setup is an accelerator with maximum electron energy of 0.4 Mev. Electrons at this energy ensure radiation polymerization of a 0.2-0.3 mm layer of glass-plastics. In this layer, when the density of the current of the beam is several tens of microamperes per square centimeter, dose strength of 10^6 - 10^7 rads/sec is produced.

1/1

1/2 C17 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFLUENCE OF STRUCTURE OF INITIAL COMPONENTS OF RADIATION CURING OF
UNSATURATED OLIGOESTERS AND OLIGOESTERURETHANES -U-
AUTHOR--(05)-CHELCHENKO, S.I., VIDENINA, N.G., MATYUSHOVA, V.G.,
CHERVETSOVA, I.N., PYARKOV, G.N.
COUNTRY OF INFO--USSR

SOURCE--IND. ENG. CHEM., PRGD. RES. DEVELOP. 1970, 9(2), 143-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RADIATION POLYMERIZATION, OLIGOMER, MALEIC ANHYDRIDE,
ETHYLENE, ETHYLENE GLYCOL, PHTHALIC ANHYDRIDE, ADIPIC ACID, SEBACIC
ACID, ETHYL CARBAMATE, THERMAL STABILITY, CHEMICAL RESISTANCE, POLYMER
STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRACTION--0002/1144

STEP NO--05/0000/70/009/002/0143/0146

CIRC ACCESSION NO--AP0120566

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126589

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. THE IRRADN. COPOLYMN. OF UNSATD. OLIGGESTERS AND OLIGGESTER URETHANES WAS INVESTIGATED. THE UNSATD. OLIGGESTERS WERE SYNTHESIZED FROM MALEIC ANHYDRIDE, C SUB2 H SUB4, AND DIETHYLENE GLYCOL, PHTHALIC ANHYDRIDE, AND ENDOMETHYLENTETRAHYDROPHTHALIC ANHYDRIDE, ADIPIC AND SEBACIC ACIDS BEING USED AS MODIFIERS. UNSATD. OLIGGESTER URETHANES OF VARIOUS FREE ISOCYANATE GROUP CONTENTS WERE PRODUCED BY INTERACTION OF OLIGOETHYLENE, OLIGODIETHYLENE, AND OLIGETRIETHYLENE MALEATES WITH TOLYLENE, DIPHENYLMETHANE, AND HEXAMETHYLENE DIISOCYANATES. THE RELATIVE CURING RATE DEPENDS ON THE STRUCTURE OF THE OLIGOMERS, ESP. THE MONOMERS. IN THE CASE OF UNSATD. OLIGGESTER URETHANES, ISOCYANATE GROUPS PARTICIPATE IN THE CURING REACTION. IN IRRADN. COPOLYMN., BOTH THE YIELD OF INSOL. FRACTION AND CONVERSION OF DOUBLE BONDS ARE HIGHER THAN IN THE PRESENCE OF PEROXIDES. PHYS. AND MECH. PROPERTIES, THERMAL STABILITY, AND H SUB2 O AND CHEM. RESISTANCE ARE, AS A RULE, HIGHER FOR POLYMERS OBTAINED DURING HIGH ENERGY IRRADN. FACILITY: INST. HIGH MOL. CHEM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 538.27

SOLOZHENKIN, P. M., ZEMLYANSKIY, N. I., ~~CHERVIN, I. I.~~, and MEL'NIK, Ya. I.,
Institute of Chemistry, Academy of Sciences Tadzhik SSR, and L'vov State
University imeni I. Franko

"Nuclear Magnetic Resonance Spectra of Dithiophosphorus Acids"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 6, 1971, pp 38-42

Abstract: To study the spin-spin coupling of phosphorus with hydrogen, dithiophosphates and dithiophosphinates were investigated with nuclear magnetic resonance (NMR) spectroscopy. High resolution NMR spectra were recorded for potassium dithiophosphates with acetylene and alkyl groups on the Varian HA-100 spectrometer, at a working frequency of 100 MHz. The NMR spectrum of potassium O-O-dipropargyldithiophosphate consists of a triplet of the $\text{CH}\equiv\text{C}$ group due to spin-spin interaction of this proton with the methylene group, and two doublets of the CH_2 group. The doublets of the CH_2 group are associated by interaction of protons with the phosphorus nucleus via oxygen. In diethylmonothiophosphate, the CH_3 group, under the influence of the P^{31} atom, is split into the doublet $J_{\text{CH}_3-\text{P}^{31}} = 12 \text{ Hz}$. The NMR spectrum of potassium O-O-dicrotyldithiophosphate consists of the CH_3 doublet, the multiplet of the $\text{CH}=\text{CH}$, and the doublet CH_2O , whose

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SOLOZHENKIN, P. M., et al., Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 6, 1971, pp 38-42

components do not have a completely resolved fine structure due to the small constant of spin-spin interaction between protons $J_{CH_2-CH} = 2\text{Hz}$. Similarly, the NMR spectra of the following compounds were recorded and analyzed: potassium O-O-di(beta-methyl)-allyldithiophosphate, potassium O-O-diethyl-dithiophosphate, and sodium mono- and dithiophosphinates. Based on the foregoing data, it can be concluded that in dithiophosphinates the spin-spin coupling J_{HP} is extended even to protons separated from phosphorus by several bonds; this long-range spin-spin coupling is not observed in dithiophosphates.

2/2

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1/2 033 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FEATURES OF THE HIGHER NERVOUS ACTIVITY OF DOGS CHRONICALLY
IRRADIATED AT AN EARLY AGE WITH ENDOGENOUS RADIOPHOSPHORUS -U-
AUTHOR--CHERVINSKAYA, A.F.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(1), 59-64

DATE PUBLISHED-----70

SUBJECT AREA--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHOSPHORUS ISOTOPE, CHEMICAL LABELLING, BETA RADIATION,
RADIATION BIOLOGIC EFFECT, RADIATION DOSAGE, NERVOUS SYSTEM, DOG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1097/0237

STEP NO--UR/0205/70/010/001/0059/0034

CIRC ACCESSION NO--AP0119233

UNCLASSIFIED

272 033

UNCLASSIFIED

PROCESSING DATE--2000CT70

CIRC ACCESSION NO--AP0119233

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE EFFECT ON HIGHER NERVOUS ACTIVITY OF CHRONIC INTERNAL IRRADN. WITH BETA RAYS FROM PRIME32 P APPLIED IN LOW DOSES TO INFANT DOGS (5-6 WEEKS). THE ANIMALS DAILY RECEIVED 5 MU CI NA SUB2 H PRIME32 PO SUB4-KG IN THEIR DIET. THE TOTAL ACTIVITY APPLIED TO INDIVIDUAL ANIMALS WAS 380-1200 MUCL. IN THE IRRADIATED ANIMALS, CHANGES OF EXCITAION AS WELL AS INTERNAL INHIBITION PROCESSES WERE MANIFESTED TO A GREATER OR LESSEK EXTENT DEPENDING ON INDIVIDUAL RADIOSENSITIVITY. THE DISTURBANCE OF THE NEURODYNAMICS WAS MOST OFTEN OBSERVED IN ANIMALS IN GOOD CONDITION AND WITH NO HEMATOL. CHANGES; THIS SUGGESTED THAT A DIRECT LESION OF THE NERVOUS SYSTEM TAKES PLACE. FACILITY: INST. BIOL., ROSTOV. NA DON. GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

USSR

UDC: 51

SMIRNOV, A. N., CHERVINSKAYA, L. A.

"Concerning a Problem on a Graph"

V sb. Primeneniye mat. v ekon. (Use of Mathematics in Economics--collection of works), vyp. 7, Leningrad, Leningrad University, 1972, pp 77-80 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V396)

[No abstract]

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USSR

UDC 678.675:678.06-419.8:677.521

CHUDINA, L. I., TANUNINA, P. M., LITOVCHENKO, S. I., CHERVINSKAYA, M. A.,
CHERDASOV, M. V., VOROB'YEV, V. D., VLASOVA, K. N., KISELEV, B. A., and
DAVYDOVA, I. F.

"Polyimides and Polybenzimidazols for Plexiglasses and Cements"

Moscow, Plasticheskiye Massy, No 4, 1973, pp 15-17

Abstract: The physical and chemical properties were determined for a number of thermoplastics -- such as the polyimides (PI), polyamidoimides (PAI), and polybenzimidazols (PBI) -- forming 15-68% solutions with different solvents. The PAI and PBI plus three of the PI resins formed linear structures; two of the PI resins formed a three-dimensional structure. The linear resins have a greater strength than the crosslinked below temperatures of about 300°C. The data are given in several tables and graphs.

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USSR

UDC 576.85(478)

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ELKIS, K. U., KORNES, R. V., BELYAYEVA, N. S., CHEBAN, Ye. D., KOTSEFAN, A. S., DOBRUSKINA, S. V., GURCHIOGLUYANTS, L. V., and MIKHAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology and Kishinev Sanitary Epidemiological Station

"Fermentation Reaction Types and Colicinogenic Properties of Shigella Sonnei Circulating in the City of Kishinev, and Determining Their Sensitivity to Antibiotics"

Kishinev, Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Abstract: The Shigella sonnei strain accounted for 97.9-99 percent of the cases of dysentery in Kishinev in 1968-70. The object of this study was to identify the types of fermentation reactions of Shigella sonnei isolated in 1968-70 (4,507 cultures), and to study their colicinogenic properties and sensitivity to antibiotics. Shigella bacilli isolated from victims in 1968 were found to be primarily fermentation type II (71.4 percent); in 1969-70, type I bacilli predominated (66.4-94.1 percent); Shigella type III was most frequently isolated from the healthy. The results of studies on colicin production showed that, of 922 cultures, 842 were inactive with respect to E. coli K-12 and E. coli B and ϕ ; 76 cultures were colicin type K-12; 4, colicin type ϕ .
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MARITS, A. A., et al., Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Among the K-12 type cultures, 54 percent were fermentation type I; 44.8 percent were type II; and 1.2 percent were type III. The cultures isolated in 1969 exhibited a gradual decrease of strains sensitive to levomycetin, and a growing number of strains sensitive to neomycin and monomycin.

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USSR

U.S. 10-199-1971

MARITS, A. A., CHASHCHINA, I. N., CHERVIDENAYA, S. I., JANNIS, H. V., KILYANIEVA, N. S., CHERBAV Ye. D., KATSEFAN, A. S., KORMES, R. B., DUBINSKII, S. V., GURCHIOGLUYANIS, L. V., and NISLAILOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology, and Kishinev Sanitary Epidemiological Station

"Enzymatic Types of *Salmonella* Enteropathogens Circulating in Kishinev"

Kishinev, *Merovodnennije*, No 3, May/June 1970, pp 40-42

Abstract: The number of *Salmonella* strains isolated in Kishinev in 1970 was more than four times greater than in 1969. Many healthy individuals are carriers of these bacteria. A total of 2,714 cultures of *Salmonella* Enteropathogens were investigated to determine their morphological, peptolytic, antigenic, and other properties, including their ability to ferment sugars to acids. Pathogens were classified into three enzymatic types. Type I -- cultures ferment rhamnose within the first 24 hours of incubation at 37°C, but do not ferment xylose for a week; type II -- cultures ferment rhamnose with a delay (after three to four days), or do not ferment either rhamnose or xylose; type III -- cultures ferment both sugars within the first 24 hours. Of the 2,714 cultures investigated, 71.4% belonged to type II, 21.5% to type I, and 7.1% to type III. The tests are fairly easy and can be performed in routine clinical laboratories.

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Single Crystals

USSR

UDC 539.216.22:621.318.1+538.245.21

CHEBYVINSKIY, N. M., All-Union Scientific Research Institute of Metrology
ineni D. I. Mendeleev

"Electric Conductivity of Monocrystalline Magnesium-Manganese Ferrite Films"

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 7,
No 10, Oct 71, pp 1366-1368

Abstract: This study concerns the electric conductivity of single-crystal Mg-Mn ferrite films. The temperature-conductivity relationships were measured at above-zero temperatures including the phase transition region. The specimens were produced by epitaxial growth on magnesium oxide cleavages. The measurement results are presented in the form of curves reflecting the dependence of electroconductivity on temperature in both annealed and unannealed specimens. The major distinctive characteristics in the conductivity of the films, including the "steps" in the transition phase region are shown to be related to the preparation technology (treatment durations) and are attributed to changes in vacancy concentrations. The thermal emf sign of the films indicates the presence of n -type conductivity. (2 illustrations, 1 table, 7 bibliographic references).

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USSR

LEBEDEV, V. P., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 1, Jan 72, pp 138-141

to 32 microns. Two instruments with different acoustic power can be connected to the generator. The ultrasonic knife will be particularly useful for precision cuttings of brain tissue such as partial chordotomy or cutting into the cortex. It can be fastened to the manipulator of a stereotaxic apparatus.

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USSR

GRACHEV, S. V., and CHERVINSKIY, V. F., Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 851-856

data of X-ray phase analysis, on the other, substantiates the previous position that in the studied alloys the processes of recovery are related not so much to the processes of over-aging of iron-nickel martensite as to the formation of a stabilized austenite in the structure.

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USSR

DESYATNIK, V. N., et al., Zhurnal Fizicheskoy Khimii, Vol 46, Vyp 8, 1972,
p 2159

$345 \pm 2^{\circ}\text{C}$. In the $\text{CsCl}-\text{UCl}_4$ system, the eutectic mixtures melt at 522 ± 2
and $356 \pm 2^{\circ}\text{C}$, and correspond to 17 and 63 mol % concentrations of UCl_4
respectively.

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CHERVONENKIS, A Ya.

SO: JPRS 59661
25 JULY 1973

CROWING SINGLE ORTHOFERRITE CRYSTALS BY CRYSTALLINE ZONE MELTING

A. M. Balashov and A. Ya. Chervonenkii

pp 1-37

1. Introduction

Among the large range of ferrite materials, orthoferrites of rare earth elements occupy a special place because of their specific magnetic and optical properties. Many work on ferrimagnets with a clearly expressed uniaxial anisotropy, where materials are ideally suitable for the creation of a system of mobile isolated domains in thin recrystallized layers [1]. Such a possibility opens up the prospects of creating an entire class of logical and storage units based on the recording control and readout of domains -- information-carrying media [2, 3]. At the present time, side by side with orthoferrites, attempts are being made to use other uniaxial magnets -- hexaferrites and garnets with complex compositions -- for that purpose [4]. Orthoferrites, however, have a number of advantages over other uniaxial ferrites due to the record-high mobility of their domains, record transparency in visible and infrared light, and relatively high technological level of the synthesis of single crystals. In [5] it was shown that the domain mobility in YFeO can reach 6000 cm/second (measured at room temperature and 50,000 oersted) oriented at all regions temperatures, which is higher by several orders of magnitude than in garnets and hexaferrites. The transparency of orthoferrites at room temperature in red light ($\lambda = 0.6 \text{ micron}$) is substantially higher than in all known magnets [6, 7], and in combination with great magneto-optical effect this permits visual study of the domain structure and use of magnetooptical readout

CHERVONENKIS, A. Ya.

Mathematics

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6. 3000 100

EFFECTIVE SEARCH ALGORITHM FOR OPTIMAL SOLUTIONS WITH RESPECT TO CRITICAL DATA

Article by A. N. Yegorov, A. Ya. Chervonenkis, Moscow. *Vopr. Prikl. Matem. i Mekh.* 1977, No. 15, 117-117.

1. Many problems of optimization for critical solutions with respect to critical data reduce to the following statement: find the minimum of the functional

$$J(x) = \int_{\Omega} F(x, y) dx, \quad (1)$$

if the density $F(x)$ is unknown, but the sample x_1, \dots, x_n of fixed length n is given.

For the solution of this problem at the present time, a computer process is used connected with the idea of minimizing the maximum of the empirical functional

$$J_n(x) = \int_{\Omega} F_n(x, y) dx, \quad (2)$$

its minimum consists in the fact that the function $F(x, y)$ minimizing (1) is approximated by the function $F_n(x, y)$ when n increases.

The empirical process applied to this search process for the optimum are aimed primarily at estimating the maximum of the possible errors. In Reference [1], we obtained the following estimate: the probability

$$P_n(J_n(x) - J(x) > \epsilon) \leq \ln n / \epsilon \int_{\Omega} F(x, y) dx \quad (3)$$

USSR

UDC: 51:155.001.57:681.3.06

VAPNIK, V. N., LERNER, A. Ya., CHERVONENKIS, A. Ya.

"Methods of Instruction in Problems of Diagnosis"

Tr. Mezhdunar. simpoziuma po tekhn. i biol. probl. upr., 1968. Raspoznavaniye obrazov. Adaptivn. sistemy (Works of the International Symposium on Technical and Biological Problems of Control, 1968. Pattern Recognition. Adaptive Systems), Moscow, "Nauka", 1971, pp 31-40 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V618)

Translation: The authors consider relations between theory and heuristics in problems of teaching pattern recognition. A study is made of the fundamental relationship between the job of teaching pattern recognition and the problem of uniform convergence of frequencies to probabilities with respect to a class of events. The use of methods of instruction in problems of diagnosis is considered. Authors' abstract.

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1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INVESTIGATION OF IRON SUBLATTICES IN A SINGLE CRYSTAL OF THE
ORTHOFEARRITE TMFEC SUB3 -U-
AUTHOR-(04)-KUCHAROV, A.G., LUSHMANOV, A.A., YANZIN, I.I., CHERVONENKIS,
A.YA.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1511-1517
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTALLOGRAPHY, IRON OXIDE, MAGNETIC STRUCTURE, NEUTRON
SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1930

STEP NO--UR/0056/70/058/005/1511/1517

CIRC ACCESSION NO--AP0125522

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125522

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BEHAVIOR OF THE ANTIFERROMAGNETIC STRUCTURE PRODUCED BY FE PRIME3 POSITIVE ION MOMENTS IN THE ORTHORHOMBIC COMPOUND TMFEO SUB3 IS INVESTIGATED BY THE ELASTIC MAGNETIC NEUTRON (LAMBDA EQUALS 1.07 ANGSTROM) SCATTERING AND TORQUE TECHNIQUES AT TEMPERATURES BETWEEN 78 AND 720DEGREEK. THE NEEL TEMPERATURE OF THE IRON SUBLATTICES DETERMINED ON BASIS OF TEMPERATURE DEPENDENCE OF THE INTEGRAL MAGNETIC REFLECTION INTENSITIES IS 550 PLUS OR MINUS 50DEGREEK. THE EXPERIMENTAL TEMPERATURE DEPENDENCE OF THE INTEGRAL INTENSITIES IS IDENTICAL WITH THE BRILLOUIN FUNCTION FOR THE GROUND SPIN STATE S SUBFIVEHALVES OF THE FE PRIME3 POSITIVE ION. AT 0DEGREEK THE MAGNETIC MOMENT OF IRON IONS IS 4.68 PLUS OR MINUS 0.03 MU SUBB. IT IS SHOWN THAT THE ANOMALY OF THE TORQUES AT TEMPERATURES BETWEEN 103 AND 78DEGREEK IS DUE TO REORIENTATION OF THE EASY MAGNETIZATION VECTOR AWAY FROM THE (001) DIRECTION TO THE (100) DIRECTION; AT 78DEGREEK THIS REORIENTATION DOES NOT TERMINATE. CAUSES OF DISCREPANCIES BETWEEN THE EXPERIMENTAL AND CALCULATED FORM FACTORS FOR THE FE PRIME3 POSITIVE ION AT LARGE SCATTERING ANGLES ARE DISCUSSED. CAUSES OF THE SHIFT OF THE REORIENTATION TEMPERATURE INTERVAL IN MAGNETIC AND NEUTRON DIFFRACTION MEASUREMENTS ARE ALSO DISCUSSED. FACILITY: INSTITUT KRISTALLOGRAFI, AN SSSR.

UNCLASSIFIED

USSR

UDC 621.315.019.3.003.1

CHERVONENKIS, Ya. M., RABINOVICH, D. M.

"Problems of Technical-Economic Estimates of Municipal Network Reliability

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities -- collection of works), Leningrad, Energiya Press, 1970, pp 204-207 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 304)

Translation: An effort is made at quantitative evaluation of the provisional losses from failure to deliver 1 kilowatt-hour in the residential sector of a city. The results of questioning a large number of residential consumers are used.

1/1

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USSR

UDC 541.14

CHERVOLENKO, V. S., ROGINSKIY, V. A., PSHEZHETSKIY, S. YA.
Physicochemical Institute imeni L. Ya. Karpov, Moscow, State
Committee for Chemistry

"Photochemistry of Free Radicals. Alcohol and Ether Radicals"

Moscow, Khimiya Vysokikh Energiy, Vol 4, No 5, Sep-Oct 70,
pp 450-451

Abstract: The methods of EPR, low-temperature spectroscopy, and chromatography were used to study photoreactions of the radicals which form in the gamma irradiation of methanol, ethanol, n-propanol, iso-propanol, and n-butanol frozen at 77°K, as well as diethyl, di-n-propyl and diisopropyl ethers.

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1/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FORMATION OF STRUCTURE DURING THE ROLLING AND ANNEALING OF CAST
CRYSTALS OF TRANSFORMER STEEL -U-
AUTHOR-(04)-MOLOTOLOV, B.V., POTEKINA, V.F., SAMARINA, N.M.,
~~CHERYOMENKOV, V.A.~~
COUNTRY OF INFO--USSR C
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 245-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--TRANSFORMER STEEL, ANNEALING, METAL SINGLE CRYSTAL, IRON
ALLOY, COLD ROLLING, HOT ROLLING, CRYSTAL DISLOCATION, METAL TEXTURE,
CRYSTAL GROWING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0167 STEP NO--UR/0048/70/034/002/0245/0248
CIRC ACCESSION NO--AP0115891
UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0115891
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF SILICIDED FE
WERE GROWN FROM THE MELT BY CZOCHRALSKI'S METHOD. SAMPLES FOR HOT AND
COLD ROLLING WERE CUT FROM THE CRYSTALS. THE STUDY OF THE (110) (001)
CRYSTALS AFTER COLD ROLLING WITH 5PERCENT DEFORMATION SHOWED THAT THE
PLASTIC STRAIN OCCURS BY TWINNING AND SLIP. AFTER 80PERCENT STRAIN
BANDS WITH AN ELEVATED DISLOCATION D. APPEAR VISIBLY IN THE STRUCTURE.
THE TEXTURE OF HOT ROLLED CRYSTALS DEPENDS ON THE TEMP. OF ROLLING AND
THE DEGREE OF DEFORMATION. BY SUITABLY CHOOSING THE ROLLING CONDITIONS
THE INITIAL ORIENTATION OF THE SINGLE CRYSTALS CAN BE PRESERVED DURING
HOT ROLLING. FACILITY: TSNIICM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT71
TITLE--STRUCTURAL REASONS FOR THE PRODUCTION OF TRANSFORMER STEEL WITH
CUBIC TEXTURE -U-
AUTHOR--(03)-SOSNIN, V.V., MOLOTOLOV, B.V., CHERVONENKOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 367-70
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TRANSFORMER STEEL, METAL TEXTURE, ALLOY PHASE TRANSFORMATION,
IRON ALLOY, SILICON ALLOY, HOT ROLLING, SOLID SOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1525 STEP NO--UR/0048/70/034/002/0367/0370
CIRC ACCESSION NO--AP0170306

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120306

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURAL CHANGES ARE DISCUSSED, OCCURRING IN A FE-SI ALLOY WITH 3PERCENT SI WHEN CAST METAL WITH AN AXIAL (001) TEXTURE IS ANNEALED AND HOT ROLLED. THE RESULTING TEXTURE, WHICH SHOULD BE (001) (100), DEPENDS ON FACTORS LIKE THE DEGREE OF TEXTURE DEVELOPMENT IN THE INGOT, THE AMT. OF ALLOYING ADDNS. IN THE SOLID SOLN., AND AN ABSENCE OF PHASE TRANSFORMATIONS. FACILITY: TSNIICHM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

Miscellaneous

USSR

UDC 669.14

PROKOPCHENKO, YE. A., OMEL'YANENKO, N. T., and CHERVONEV, L. S., Zaporozh'ye Pedagogical Institute

"Temperature Relationship of Magnetic Susceptibility in Fe-Si Alloys Coated With Nickel Films"

Kiev, Metallofizika, No 39, 1972, pp 89-91

Abstract: Results are presented of an investigation into the temperature relationship of maximum differential susceptibility in an Fe-Si alloy coated with films of galvanically deposited nickel. It was established that with increased temperature a third maximum χ appears which does not correspond to $\chi_{\max} \uparrow$ and $\chi_{\max} \uparrow \rightarrow$. The appearance of the third susceptibility maximum was apparently associated with the decreased volume of columnar domains and the primary increase in the volume of locking domains. 1 figure, 5 bibliographic references.

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Public Health, Hygiene and Sanitation

USSR

UDC 616.916.1-097.3-056.78(47-25)

ANDZHAPARIDZE, O. G., CHERVONSKIY, G. I., DECAYATSKOVA, R. G., and TABAROV-SKAYA, I. S., Moscow Scientific Research Institute of Virus Preparations, Sanitary Epidemiological Station, Zhdanovskiy Rayon, Moscow

"Formation of Collective Immunity To Rubella in the Population of Moscow"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 71-76

Abstract: Data and results obtained in a study of hemagglutination inhibition by rubella virus collected from blood sera of 1,237 Moscow residents ranging in age from 1 to 54 years are presented. Indices included the frequency of occurrence and levels of antibodies for different age groups and the disease incidence. Several of the requisite features of collective immunity were found which distinguish the Moscow population from other rubella foci. It was found that in the age group of 1-3 years, 16% of the subjects had rubella antibodies. The corresponding percentages for other age groups were as follows: 6-7 years, 65%; 12-13 years, 72%; 18-22 years, 95% of the subjects. Children of 3-7 years of age come down most frequently with the disease. This is a particular feature of the data on the Moscow population. Also, in Moscow, the highest rate of incidence is at an earlier age than in 1/2

USSR

ANDZHAPARIDZE, O. G., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 71-76

populations of other localities, with those attending nursery or elementary schools making up the bulk of patients. It was found also that men are more likely to be afflicted by the disease than are women. The percentage of seronegative subjects among pregnant women was 5.6%, which was lower than similar figures for Europe and America. It is pointed out that the epidemic situation in other regions of the country may be different because of different geographic conditions and a different population density.

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USSR

UDC 576.858.25.095.38:576.895.42

L'VOV, D. K., GROMASHEVSKIY, V. L., SIDOROVA, G. A., TSIRKIN, Yu. M.,
CHERVONSKIY, V. I., GOSTINSKHCHIKOVA, G. V., and ARISTOVA, V. A., Institute
of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Isolation of a New Arbovirus "Baku" of the Kemerovo Group From Argasid Ticks
Ornithodoros Coniceps in Azerbaydzhani"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 434-437

Abstract: Seventeen strains of arboviruses were isolated from Ornithodoros
coniceps ticks collected (1,710 specimens) in the spring and summer of 1970 in
nests of herring gulls (Larus argentatus) on the islands of the Baku Archipelago
in the Caspian Sea. So far, four strains -- prototypes LEIV-25A, -35A, -36A,
and -46A -- were analyzed and found to be identical. They do not agglutinate
goose erythrocytes. Serological identification tests performed on the
LEIV-46A prototype revealed that this strain belongs to the antigenic complex
of Chenua virus of the Kemerovo group. According to the results of complement
fixation and neutralization reaction tests, the virus differs from Chenua,
Punta Salinos, Kono Lake, Kemerovo, Tribec, Lipovnik, and Mad Mexani viruses.
The new virus has been named "Baku virus."

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Vector Studies

4.

USSR

UDC 595.771.576.858

SOKOLOVA, E. I., MIRZOYEVA, N. M., KULIYEVA, N. M., GROMASHEVSKIY, V. L., and CHERVONSKIY, V. I., Institute of Virology, Microbiology, and Hygiene imeni G. M. Musabekov, Ministry of Health Azerbaydzhan SSR, Baku, and Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Experimental Transmission of Sindbis Virus by *Aedes aegypti* L. Mosquitoes"

Leningrad, Parazitologiya, No 5, 1971, pp 405-407

Abstract: *Aedes aegypti* is susceptible to Sindbis virus, strain A3-574. Twenty-four to forty-eight hours after the mosquitoes were allowed to feed on mouse tails filled with a viral suspension or on suckling mice, the virus titer in the insects was quite high, 10^{-5} , and 2 days later it rose to 10^{-6} . On the 7th day it fell to 10^{-4} but rose on the 10th day to 10^{-5} , reaching a peak on the 16th day, 10^{-6} . The high titers persisted until the 26th day when they began to fall to 10^{-3} (on day 29). Three to five days after suckling mice were exposed to the infected mosquitoes, the animals developed paralysis of the hind legs and died.

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USSR

UDC 576.858.25.095.38:576.895.421

L'VOV, D. K., TIMOFEYeva, A. A., GROMASHEVSKIY, V. L., and CHERVONSKIY, V. I.,
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR
and Sakhalinskaya Oblast Sanitary Epidemiological Station, Yuzhno-Sakhalinsk

"Isolation of Arboviruses from Ixodes (CeratiXodes) putus Pick.-Cambr Ticks Col-
lected in a Bird Colony on Tyuleny Island in the Sea of Okhotsk"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 440-444

Abstract: Forty-one strains of at least two different arboviruses were isolated
from Ixodes (CeratiXodes) putus Pick.-Cambr ticks collected from the common guillemot,
tern, penguin, and other aquatic birds nesting on Tyuleny Island in the Sea of Okhotsk.
The virus was isolated from females before oviposition from females that moulted in the
laboratory engorged nymphs, from males (which do not feed on blood), and from nymphs.
Suckling mice inoculated with a suspension of infected ticks developed paralysis of the
extremities and clonic convulsions after a latent period of 5 to 14 days.

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USSR

UDC 576.858.25

GAYDAMOVICH, S. YA., NIKIFOROV, L. P., GROMASHEVSKIY, V. L., OSUKHOVA, V. R., KLISENKO, G. A., CHERVONSKIY, V. I., and MEL'NIKOVA, YE. E., Institute of Virology imeni D. I. Ivanovsky, USSR Academy of Medical Sciences, Moscow

"New Arbovirus Sumakh from the Uukuniemi Group"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 21-25

Abstract: Isolation of the arbovirus Sumakh in the USSR is described for the first time. The virus was obtained from the hearts and lungs of black-birds (*Turdus merula*) collected in Azerbaydzhan. The virus was similar to but not identical with Uukuniemi, as shown in the agar gel diffusion test, but not by the complement fixation test. The isolated virus was pathogenic for suckling white mice. An incubation period of 11 days was found upon intracerebral, which in subsequent passages was reduced to 96 hours. Mice 1-3 days of age were most susceptible. An antigen for hemagglutination reactions was prepared from suckling mouse brains by the ucrose-acetone method. The titer of this antigen did not exceed 1:64. Subsequent workup with Tween-80 and ether raised the titer to 1:256-1:512. When the antigen was prepared by the frozen method, the material was enriched with Tween-80 and ether and 1/2

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GAYDAMOVICH, S. YA., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 21-25

could serve for agglutination of erythrocytes in dilutions of 1:32-1:64. Optimum hemagglutination was achieved at pH 5.8 and at a temperature of 37°C. According to preliminary data on agar diffusion, the Sumakh virus is not identical with the Uukuniemi virus. A detailed study of the antigenic structure of Sumakh virus is under way.

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USSR

UDC 678.742.2:66.018.897.01.53

BRAGINSKIY, R. P., PARFENOVA, D. S., TROITSKIY, I. D., FINKEL', E. E.,
and CHERVONTSEVA, G. M.

"Radiation Modification of Self-Extinguishing Polyethylene Compositions"

Moscow, Plasticheskiye Massy, No 1, Jan 72, pp 15-18

Abstract: The authors consider possibilities for radiation modification of self-extinguishing compositions based on low-density polyethylene to improve thermal stability and physical and mechanical characteristics at high operating temperatures. The self-quenching composition studied was made up of 77.0 percent P2015KU polyethylene, 11.3 percent chloroparaffin 70, and 11.7 percent Sb_2O_3 . The control specimens were unmodified P2015KU polyethylene.

Pressed plates about 0.3 mm thick were exposed to Co^{60} gamma radiation at room temperature in helium to absorbed doses of 1-500 Mrad. The gel fraction content was then determined. Deformation characteristics were measured on special specimens. The thermomechanical characteristics and quenching properties were also studied. It was found that an optimum dose of about 15 Mrad considerably improves the deformation characteristics of the self-extinguishing composition. Thermomechanical tests of specimens which had absorbed this dose showed that shape stability is adequate for use of

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SRAGINSKIY, R. P., et al., *Plasticheskiye Massy*, No 1, Jan 72, pp 15-18

finished articles at 100°C, which extends the region of application of this material. The authors thank L. Ye. Sokolova, L. Khokhlova and N. K. Kozlova for assistance in the experimental studies. Four figures, bibliography of twenty-four titles.

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USSR

ZOZULYA, Yu. I., CHERVOV, V. G.

"Model of the Neuron Network of a Visual Analyzer"

Probl. Bioniki. Resp. Mezhyed. Temat. Nauch.-Tekhn. Sb. [Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection], 1972, No 9, pp 28-36 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V727, by the authors).

Translation: A generalized mathematical model of a neuron network of a visual analyzer is suggested, then used to study processes of preliminary analysis, coding and synthesis of signals in the visual analyzers.

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USSR

KATSALAP, S. F., CHERVOV, V. G.

"Modeling of the 'Novelty Neurons' of the Visual System of the Frog"

Probl. Bioniki. Resp. Mezhd. Temat. Nauch.-Tekhn. Sb. [Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection], 1972, No 9, pp 69-77 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V728, by the authors).

Translation: A mathematical model of the "novelty neurons" found in the visual system of the frog is studied. The model suggested allows certain principles of information processing by the visual analyzer of the frog to be judged. A successive series of integral transforms was used in the modeling, considering certain nonlinear dependences.

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USSR

UDC 51:155.001.57:681.3.06

MARCHENKO, S. F., CHERVOV, V. G.

"Separation of Spatial Characteristics of Images and Coding of Character Information"

Probl. Bioniki. Resp. Mezhd. Nauchno-tekhn. Sb. [Problems of Bionics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 97-100, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V646 by the authors).

Translation: Problems of separation of spatial characteristics during analysis of patterns and application of biological principles for automatic analysis and coding of geometric patterns are studied. Analysis of handwritten numbers is presented as an example.

CHERVYAKOV, A. Yu.

NEUTRON DIFFRACTION ANALYSIS OF NIOBIUM NITRIDE Nb_4N_3

UDC 669.24:292.620.153.48

SPRS 5-5392
(1)1000/72

[Article by A. Yu. Chervyakov, V. A. Sosnenko, Ya. S. Usankiy, S. Sh. Shil'shin, V. P. Ianchur, Moscow Steel and Alloy Institute, Department of Koenigsen-Gruppy and the Physics of Metals; Ordzhonikidze, Iventiya Vsesoyuznaya Uchenyykh Zavedeniy, Tsel'maya Metallurgiya, Russian, No 5, 1971, submitted 5 February 1971, pp 140-144]

In recent years, a large number of phase transitions of the order-disorder type have been detected in solid interstitial solutions accompanied by the formation of He_2X [1], He_2X [2], He_2X [3], and other superlattices. This fact offers the possibility of stating the problem of whether some of the interstitial phases with a composition close to stoichiometric for the mentioned superlattices are ordered deduction solid solutions on a chemical compound base. A series of data are in favor of this point of view. For example, in reference [3], the neutron diffraction method was used to detect a high-temperature phase transition in He_2C carbides ($He - Nb, Ta$), which permits consideration of the lattices of these compounds as superlattices occurring from a disordered deduction solid solution on the basis of the chemical compound HeC with an NaCl type lattice. These superlattices have cubic symmetry and are antiferromagnetic to He_2N . It is of interest to discover to what degree the indicated arguments are also valid for other interstitial phases with close stoichiometry.

In particular, Brauer and Jander [4] demonstrated by the x-ray method for Nb_4N_3 that the metal atoms in the Nb_4N_3 form a tetragonal lattice with $c/a \approx 0.98$. Terao [5] used electron diffraction to discover the existence of superlattice peaks, and on the basis of analysis of the extinguishing law, he proposed an Nb_4N_3 model. The experimental and theoretical values of the intensity were not compared in [5]. Accordingly, the purpose of this experiment was more precisely to define the lattice of Nb_4N_3 and study its possible variation with a rise in temperature by means of neutron diffraction — the most reliable method of localizing the light atoms in the presence of heavy atoms.

USSR

UDC 621.771:621.783

USTIMENKO, V. A., KOLOGRIVOV, N. P., KRYLOVSKIY, A. P., SKREMENTOV, V. M.,
TKACHEV, A. V., and CHERVYAKOV, V. V.

"Rolling of Sheets Plated With OKh23N28M3D3T Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-
Oct 70, pp 81-82

Abstract: A description is given of new technological process of rolling corrosion-resistant sandwich sheets plated with OKh23N28M3D3T (EI943) complex alloy steel. The sheets are used for manufacturing containers for stocking and transporting highpurity acids. The chemical compositions of the basic metal (20K steel) and the plating metal are given. Data on the strength properties of the two steels are also given. The shearing strength along the welding plane substantially exceeds the minimum GOST 10885-64 value (15 kg/mm²). The high adhesion strength of the layers was confirmed by bending tests. The results show the feasibility of using this technology for the mass production of large-size sheets with a plating layer which completely satisfy the requirements of GOST 10885-64.

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USSR

UDC:621.771.8

GOLOVANENKO, S. A., MEANDROV, L. V., USTIMENKO, V. A., TKACHEVA, A. V., and
CHERVYAKOVA, V. V.

"Mechanical Properties of Steel + Nickel and Steel + Monel Bimetals"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 164-170

Translation: The strength and plasticity characteristics of bimetals were determined during tensile testing in the 20-1200°C temperature interval and impact testing between -60 and +20°C.

In the hot-rolled state, steel + nickel and steel + monel bimetals have mechanical properties as good as the properties of the base layer (steel), while their impact toughness is significantly better.

The dependence of adhesion strength of the layers on degree of deformation and state of the contact surface is obtained. 4 figures; 3 biblio. refs.

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USSR

MINDELI, M. SH., GLOVATSKIY, A.B., and CHERZER, A. N.

"Desulfurating Cast Iron at the Rustave Metallurgical Plant"

Moscow, Metallurg, No 2, 1971, pp 11-13

Abstract: Blast furnaces of 700 and 750 m³ capacity at the Rustava Metallurgical Plant smelt converted cast iron from a charge containing 30-35% crude ore from the Dashkesenskoye deposit and a 65-70% agglomerate made of this ore. Typical of the ore is the increased sulfur content (0.15-0.35%); the agglomerate contains 0.1-0.15% S. In 1965 a facility for treating cast iron in ladles with pig iron by forced introduction of the latter into the cast iron with a "bell-hopper" type device (later referred to as a "vaporizer"). Installation of a second monorail car with a separate section for charging the vaporizer with magnesium greatly increased the handling capacity of the facility. A difficult and time-consuming operation has been replacing malfunctioning vaporizers. To solve this, a device consisting of a rotating mechanism of the blast furnace electric charging barrel with a small circular platform to accommodate four ready vaporizers at the same time was installed. The unit serves to desulfurate cast iron and was designed after the facilities at the Donetsk and the Kramatorsk plants. From January to May 1970, about 75,000 tons of converted cast iron with an average sulfur content of 0.081% were treated

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USSR

MINDELI, M. SH., et al, Moscow, Metallurg, No 2, 1971, pp 11-13

in the facility. All the treated cast iron was placed in category I-II as to sulfur content. In August-September 1970 the facility was again redesigned. Two vaporizers were installed on one of the cars. The second car was fitted with an independent department for charging. At the present time three vaporizers in two cars are simultaneously in operation. The flat lid which formerly covered the ladle containing cast iron during the desulfuration was replaced by a trapezoidal-shaped lid insert. This made it possible to fill the ladle with more cast iron. The sulfur content in the cast iron was reduced from a high of 0.100% to a low of less than 0.006%. The consumption of Mg, in kg per ton of cast iron, ranged from 1.0 to 0.40.

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USSR

UDC 631.8 + 632.954:633

CHESALIN, G. A., FILIPPOVA, N. V., and TIMOFEYEVA, A. A., VIUA [An unknown abbreviation]

"The Role of Mineral Nutrition in Detoxification of Herbicides in Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 10 (120), 1973, pp 47-50

Abstract: It has been shown that the absorption, accumulation, and detoxification of herbicides depended to a large extent on the conditions of mineral nutrition of the plants. The nutrition level affects the residual quantity of herbicides in the plant organs. In this fashion, regulating the nutrition of cultured plants, it is possible to lower the content of residual levels of herbicides in the crop and even to inactivate them completely in some plants during their period of vegetation.

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USSR

UDC 632.954:633.1

CHESALIN, G. A., Doctor of Agricultural Sciences, Director of the Herbicidal Laboratory, All-Union Scientific Research Institute of Fertilizers and Agriculture Soil Science, Moscow, Ministry of Agriculture USSR

"Herbicides in Planting of Grain Cultures"

Moscow, Zashchita Rasteniy, No 5, 1970, p 26

Abstract: The article is a report on a sectional meeting of the Third All-Union Conference on herbicides. Currently 2,4-D and 2M-4X are the two most widely used herbicides. Pros and cons of the use of herbicides were reported, such as lesser ground workup required with the use of herbicides on one hand, with the dangers involved in airplane spraying on the other. Chemical weeding appears to be especially beneficial with plants requiring watering, since the humidity and temperature conditions of the soil facilitate weed growth. The problem of the resistance of weeds was discussed with respect to systematic application of 2,4-D. It was reported

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USSR

CHESALIN, G. A., Zashchita Rasteniy, No 5, 1970, p 26

that concurrent application of 2,4-D and a fertilizer increased the harvest considerably; therefore, application of this modification to the poorer soils where fertilization is needed was proposed. Propanide and ordram were used effectively against the weeds found on rice plantations, increasing the rice harvest considerably. Studies of herbicides should be directed towards agrotechnical means, evaluation of biological properties of the cultures, and determination of residues in the harvest.

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1/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THEORY OF A MODELING EXPERIMENT FOR ELECTRON DIFFUSION IN A TRAP
WITH MAGNETIC MIRRORS -U-
AUTHOR--(02)-SKURIDIN, G.A., CHESALIN, L.S.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKIE ISSLEDOVANIYA, VOL. 8, JAN.-FEB. 1970, P 98-103
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MAGNETIC MIRROR, MODEL THEORY, PERTURBATION, NUMERIC
INTEGRATION, ELECTRON MOBILITY, ELECTRON TRAP, DIFFUSION COEFFICIENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1980/0146 STEP NO--UR/0293/70/008/000/0098/0103
CIRC ACCESSION NO--AP0048438
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--19SEP70

CIRC ACCESSION NO--AP0048438

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF ELECTRON DIFFUSION IN A TRAP WITH MAGNETIC MIRRORS IN THE PRESENCE OF PULSED FIELD PERTURBATIONS. THE UNPERTURBED FIELD WAS AXIALLY SYMMETRIC, AND THE RISE TIME OF THE NONAXISYMMETRIC DISTURBANCE UNTIL ITS MAXIMUM VALUE WAS EQUAL TO THE DECAY TIME AND WAS SEVERAL TIMES LESS THAN THE ELECTRON DRIFT ROTATION PERIOD. DIFFUSION COEFFICIENTS WERE DETERMINED BY NUMERICAL INTEGRATION OF THE DRIFT EQUATION. THEORETICAL RESULTS ARE IN GOOD AGREEMENT WITH MEASURED DATA, INDICATING A VALIDITY OF THE THEORY IN SPITE OF THE DRIFT APPROXIMATION UTILIZED.

UNCLASSIFIED

CHESANOV, V.V.

THE BEHAVIOR OF BOR-60 REACTOR CONTROL AND SAFETY RODS
DURING THEIR OPERATION

Article by S. N. Volin, V. E. Golitsyn, P. H. Guseva, R. I. Malyuk, V. I. Prokhorov, and V. A. Chernov. Scientific Research Institute of Atomic Reactors (IAR), Lenin, Dniprova, Poliozhayushchye materialy i stroyeniye regulirovaniya iyselnykh reaktorov, Russian International Working Group for Fast Reactors Specialists Meeting, International Atomic Energy Agency, Dniprova, 4-8 June, 1973]

The results of an investigation of automatic regulation (AR) rods, burn-up compensation (KS-2) rods, and rods for compensation of the temperature and power effects of reactivity (KS-1), which had operated in the BOR-60 from 1 year to 2.5 years, are given. It was established that the basic radiation effects determining the efficiency of the PCL (absorbing elements) is the bulging (swelling) of the carbide, the magnitude of which is associated with temperature and burn-up. Gas liberation from BAC at working temperatures for the operation of the rod is not great and does not exceed 10% out of the total formed.

1. Introduction.

In a reactor, for reliable operation, regulating rods of various designation are used: emergency protection (AZ) rods, burn-up and temperature effects (KS).

The requirements imposed upon them also differ. Thus, for AZ rods the main thing is the efficiency of the absorbent, and requirements with respect to radiation resistance are less rigid. AR and KS rods, their high radiation resistance must be the basic factor.

USSR

UDC 616.988.75-053.2

CHESHIK, S. G., RODOV, M. N., IVANOVA, L. A., ZAYTSEVA, N. D., and KEONDZHAN, S. YE., Clinical Department, Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, and City Clinical Hospital of Infectious Diseases No 82, Moscow

"Clinical Picture and Diagnosis of Hong-Kong A2 Influenza in Children"

Moscow, Pediatriya, No 5, May 71, pp 92-93

Abstract: During the peak of the Hong-Kong A2 influenza epidemic in 1969, the frequency of acute respiratory diseases increased 8.4 times among adults, 7.9 times among children aged 7-14, and only 2.4 times among children aged up to 2 years. Nevertheless, in absolute figures, the frequency was highest in the last group, because the pre-epidemic morbidity among small children was very great. Serological and fluorescent antibody tests performed on hospitalized patients in December 1968 through March 1969 revealed that all respiratory diseases identified in the pre-epidemic period were also diagnosed during the epidemic, though their relative proportions were somewhat smaller: 28.3% in December, 25.4% in January, and 10.4% in February. This makes it necessary to perform differential diagnoses of viral respiratory diseases in hospitals in order to distribute the patient in proper wards. Of the 122 children hospitalized with diagnosed influenza, 74 developed complications;

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USSR

CHESHIK, S. G., et al., *Pediatrics*, No 5, May 71, pp 92-93

45 developed pneumonia, 9 developed bronchitis, and 20 developed other diseases. Among infants, toxemia was less pronounced which developed in 47% of infants up to the age of 1 year and in 73% of infants aged up to 3 months. Among the youngest infants, pneumonia often developed suddenly and progressed with a fatal speed. Therefore, it is necessary to hospitalize these children regardless of the severity of the influenza.

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USSR

UDC 616.985.5-036.21

CHESHIK, S. G., Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR

"Some Problems in the Epidemiology of Adenovirus Infection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 3, 1971, pp 101-106

Abstract: Some general observations on the epidemiological aspects of adenovirus infection, route of transmission, etc. are given, based on experience with five outbreaks of the disease, two of which (one in a children's hospital, the other in a village) are described in detail. A major epidemiological feature of the disease is its slow development and prolonged course. The incubation period is from 4 to 14 days (generally 5 to 8 days). The upper respiratory tract is the main point of entry of the agent and the droplet mechanism of transmission is the common one. The intensity of the epidemic process is directly related to the closeness of contact of the susceptible person with the source of infection. Virus can be isolated from throat smears, blood (only in the febrile period and during the 2d and 3d days of the disease), and feces sometimes for as long as 25 days or more after the clinical symptoms of the infection have disappeared.

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UNCLASSIFIED
TITLE--HEAT RESISTANCE OF ALUMINIZED STEEL IN A MEDIUM CONTAINING HYDROGEN
SULFIDE -U-
AUTHOR--CHESKIS, K.F.I., LEVTONOVA, A.M. C
COUNTRY OF INFO--USSR
SOURCE--ZASHCH. METAL. 1970, 6(1), 56-8
DATE PUBLISHED-----7C
38
42
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HEAT RESISTANT STEEL, HYDROGEN SULFIDE, ALUMINIZING, METAL
COATING, METAL SURFACE IMPREGNATION, CORROSION PREVENTION, PITTING
CORROSION, ALLOY STEEL, STAINLESS STEEL/(U)KH18N10T STAINLESS STEEL,
(U)KH13 STAINLESS STEEL, (U)KH8VF ALLOY STEEL, (U)KH12VMF STAINLESS
STEEL, (U)KH5V CHROMIUM STEEL, (U)ST3 CARBON STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1979/1241 STEP AC--UR/0365/70/006/001/0056/0058
CIRC ACCESSION AC--APO047667
UNCLASSIFIED

Acc. Nr: **AF0047667** Abstracting Service:
CHEMICAL ABST.

Ref. Code:

4-70 UR 0365

[81884c Heat-resistance of aluminized steel in a medium containing hydrogen sulfide. Cheskis, Kh. I.; Levtonova, N. M. (USSR). *Zashch. Metal.* 1970, 6(1), 56-8 (Russ). The specimens of St3 (C 0.18, Si 0.16, Mn 0.54, S 0.028, P 0.015%) and Kh5M (C 0.09-0.10, Si 0.2-0.30, Mn 0.32-0.58, Cr 5.0-5.1, Mo 0.52-0.58, S 0.009-0.014, P 0.012-0.02%) steels were aluminized by 2 methods: (1) in the mixt. contg. ferroaluminium 30, Al-Cr master alloy 3, Cr 3, NH_4Cl 1%, Al_2O_3 the remainder, at 1000° for 2-12 hr with subsequent tempering at 700°; (2) in the mixt. contg. ferroaluminium 49, kaolin 49, NH_4Cl 2%, with subsequent isothermal annealing at 860°, or normalizing at 1000° and tempering at 700°. The aluminized specimens, as

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well as those of the uncoated St3, Kh5M, 1Kh8VF, 1Kh12VMF, OKh13, and Kh18N10T steels, were placed at the top of the diesel oil hydrotreatment reactor, at 365-80°, 27-30 kg/cm², S concn. ~1%, and at the outlet of the heat exchanger at 370-90°, 28-30 kg/cm². The corrosion rate was detd. by the gravimetric method. All unaluminized specimens except those of the Kh18N10T steel were corroded, but the surface of the aluminized specimens did not change. Pitting corrosion was obsd. on all specimens placed in the heat exchanger, but the pits on the aluminized specimens were very shallow. No differences in the behavior of specimens aluminized by the different methods were noticed. The Kh5M steel aluminized to a depth of 0.2-0.45 mm shows the corrosion resistance similar to that of the Kh18N10T steel.

I. Pietkiewicz

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UDC 523.164

YEFANOV, V. A., KEYS, Ye. M., KLICH, S. M., MOISEYEV, I. G.,
CHESNOKOV, A. A. (Deceased), and ESMAN, A. P.

"Radiometer in the 8-mm Range With a Parametric Amplifier"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 3, 1970,
pp 627-629

Abstract: Although parametric amplifiers have been successfully used in centimeter-wave radiometric receivers, no information has hitherto appeared in the literature concerning similar use of these amplifiers in the millimeter range. This brief communication gives the characteristics and some of the results of a radiometer used in the 8-mm wavelength range with a semiconductor parametric amplifier at its input. The observations were made with the radiotelescope RT-22 in the Crimean Astrophysical Observatory. The amplifier in question is a single tuned-circuit type with a circulator and ferrite valve at the input for additional decoupling, connected to the modulation radiometer with no change in the latter. Observations using

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USSR

YEFANOV, V. A., et al, Radiotekhnika i Elektronika, Vol 15,
No 3, 1970, pp 627-629

Abstract: this device were made of the planets Jupiter and
Venus, and of discrete sources such as 3C273, 3C279, etc. The
use of this amplifier improved the sensitivity of the radio-
meter and the reliability of the operations.

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- 2 -

1/3 022 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--8-MM BAND RADIOMETER WITH PARAMETRIC AMPLIFIER -U-
AUTHOR--YEFANOV, V.A., KEYS, YE.M., KLICH, S.M., MOISEYEV, I.G.,
CHESNOKOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, MAR 70, PP 627-629
DATE PUBLISHED----MAR70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--RADIOMETER, PARAMETRIC AMPLIFIER, RADIO TELESCOPE, RADIO
ASTRONOMY/(U)RT22 RADIOTELESCOPE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/1673 STEP NO--UR/0109/70/000/003/0627/0629
CIRC ACCESSION NO--AP0104895
UNCLASSIFIED

2/3 022

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104895

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE CHARACTERISTICS AND SOME RESULTS OF THE USE FOR RADIOASTRONOMICAL OBSERVATIONS OF A 8-MM BAND RADIOMETER WITH A SEMICONDUCTOR PARAMETRIC AMPLIFIER AT THE INPUT. THE OBSERVATIONS WERE MADE ON THE RT-22 RADIO TELESCOPE OF THE CRIMEAN ASTROPHYSICAL OBSERVATOR OF THE ACADEMY OF SCIENCES, USSR. THE MEASURED CHARACTERISTICS OF THE RADIOMETER WITH THE SEMICONDUCTOR PARAMETRIC AMPLIFIER (PA) ARE: 1) NOISE TEMPERATURE OF THE PA, INCLUDING LOSSES OF THE CIRCULATOR, SIMILAR TO 540DEGREES K; 2) SINGLE CHANNEL AMPLIFICATION FACTOR OF THE PA, INCLUDING LOSSES OF THE CIRCULATOR, SIMILAR TO 16 DB; 3) TRANSMISSION BAND OF PA AT THE 3 DB LEVEL, 150-190 MHZ; 4) NOISE TEMPERATURE OF THE MIXER, INCLUDING THE NOISE OF THE I F AMPLIFIER, 4400DEGREES K; 5) TRANSMISSION BAND OF THE I F AMPLIFIER, CONGRUENT TO 20 MHZ; 6) LOSSES OF THE WAVEGUIDE CHANNEL UP TO THE PA, INCLUDING FERRITE MODULATOR AND RECTIFIER, 2 DB; 7) LOSSES OF THE WAVEGUIDE CHANNEL BETWEEN THE PA AND THE MIXER, INCLUDING THE FERRITE RECTIFIER AT THE OUTPUT OF THE PA, 3 DB; 8) OVER ALL NOISE TEMPERATURE OF THE RADIOMETER (INCLUDING THE NOISE OF THE RADIOTELESCOPE ANTENNA), MEASURED AT DIFFERENT TIMES, TAU SUBOVERALL EQUALS 1300-1700DEGREES K; AND 9) FLUCTUATION SENSITIVITY OF RADIOMETER MEASURED UNDER THE SAME CONDITIONS AS TAU SUBOVERALL (WITH A TIME CONSTANT OF THE LOW FREQUENCY CIRCUIT TAU EQUALS 1 SEC), DELTATAU EQUALS 0.5 - 0.7DEGREES K.

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104895

ABSTRACT/EXTRACT--THE RADIOMETER DESCRIBED, BUT WITHOUT THE PA HAD, ACCORDING TO CERTIFIED DATA, TAU SUBOVERALL EQUALS 7500-9000DEGREES K, DELTATAU CONGRUENT TO 3DEGREES K WITH TAU EQUALS 1 SEC, AND WITH THE BEST ADJUSTMENT OF THE ELEMENTS OF THE RECEIVING CHANNEL IT WAS POSSIBLE TO ATTAIN TAU SUBOVERALL EQUALS 5000DEGREES K AND DELTATAU EQUALS 2DEGREES K. A COMPARISON OF THESE DATA WITH THOSE PRESENTED ABOVE SHOWS THAT USE OF THE PA EVEN WITH ITS NONOPTIMUM USE, AS OCCURED IN THE WORK, LEAD TO AN INCREASE OF THE RADIOMETER'S SENSITIVITY BY FOUR TIMES. 2 FIGS. 8 REF. RECEIVED BY EDITOR: 22 JAN 69.

UNCLASSIFIED

USSR

UDC 629.78.062.2

ALEKSEYEV, K. B., BULEKOVA, N. M., and CHESNOKOV, A. G.

"Investigation of Routine Extensive Control of a Turning Maneuver"

Inform. Materialy. Nauch. Sovet po Kompleks. Probl. (Information Materials of the Scientific Council on Complex Problems). "Kibernetika." AN SSSR, No 6 (53), 1972, pp 59-68 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.128 by T. A. Ye.)

Translation: An efficient method of controlling a turning maneuver is extensive control, in which selection of the controlling moments that are applied to the space vehicle along the body axes is performed on the basis of the condition of reotation of the space vehicle along the Euler axis. Consideration is given to the possibility of realizing this condition with the use of flywheels as the actuating devices of the engine orientation system. Included in the investigation is a derivation of the differential equation of motion of the space vehicle, and its solution. 2 references.

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USSR

UDC: 8.74

FOMIN, V. D., KHILOPKO, N. S., CHESNOKOV, A. N.

"Output of Digital Information by Digital Computer"

Tr. Irkutsk. Un-ta Ser. Mat. [Works of Irkutsk University, Mathematics Theory], 1970, 74, No 6, pp 215-218 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V516, by V. Mikheyev

Translation: The expediency is analyzed of output of information from a digital computer with the type ATsPU-128 wide-format page printer. The advantage of the ATsPU is that in place of a printing drum carrying various lines consisting of the same digital, alphabetic and special characters, the machine carries a printing drum of the same size, the surface of which consists of several identical sectors with lines of numbers. Each sector contains 12 lines with the basic numerals (0,...,9) and signs. This drum design allows the output of digital information to be several times faster, since several rows can be printed with one rotation of the printing drum. Experiments have shown that when the normal printing drum is replaced by the numbers-only drum in the ATsPU-128-2 printer, the speed of output of digital information reaches 3000 characters per second. It is noted that a similar replacement in the ATsPU-128-3 will allow

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USSR

Fomin, V. D., Khlopko, N. S., Chesnokov, A. N., Tr. Irkutsk. Un-ta Ser. Mat.,
1970, 74, No 6, pp 215-218

the rate of printout of digital information to be increased to approximately
4000 characters per second.

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USSR

UDC 669.721.472

STRELETS, Kh. L., DEVIATKIN, V. N., TATAKIN, A. N., CHESNOKOV, A. S., CHISTYAKOVA, V. S., MEDVETSKAYA, G. A., BONDARENKO, N. V.

"Development of Designs of Diaphragmless Magnesium Electrolyzers"

Tr. Vses. N-i. i Projektn. In-ta. Alyumin., Magn. i Elektrokn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 41-47. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G195 by the authors).

Translation: Results are presented from testing of pilot-scale diaphragmless electrolyzers (DE) with upper and lower input of anodes. The DE allow the specific consumption of electric power to be decreased by about 1500 kw-hr/t Mg, increasing the specific removal of Mg by 30-35% and decreasing the losses of Cl in the exhaust gases. The results of testing indicated that DE with lower position of the anodes should be introduced at two plants. 2 figs; 2 tables, 6 biblio refs.

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USSR

UDC 621.382.8-416

ALEKSENKO, A.G., CHESNOKOV, M.N.

"Topological Transformation During Design Of Film Hybrid Integrated Circuits"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 4, 1971, pp 133-140

Abstract: The paper describes the principal steps of the topological design (i.e., determination of the "geometry" of the components, their efficient disposition on the substrate, and the composition of the connection diagram assembly as applied to the type of construction of the body provided) of film hybrid microcircuits and the method of transformation of the passive part of a network [tsep'] based on the shifting of the edge of the graph. An example is given of design sketches of the arrangement on the substrate of components of hybrid integrated circuits. 4 fig. 5 ref.

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USSR

UDC: 681.32.001

MAYOROV, S. A., PETUKHOV, G. A., SKORUBSKIY, V. I., SOKOLOVA, N. S., CHESNOKOV, M. N.

"Problem of Arrangement of Structural Units When Planning and Designing Digital Devices"

Skaisiavimo technika, Vychisl. Tekhnika. T. 1 (Computer Engineering, Vol 1), Kaunas, 1970, pp 275-279 (from RZh-Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 9, Sep 70, Abstract No 9B200)

Translation: A generalized statement of the arrangement problem for devices of any level is presented by introducing the concept of the functional-structural unit and mounting space. The following steps in obtaining optimal arrangement are investigated: selection of the initial arrangement, optimization of the circuits connecting more than two contacts, processing the connection list, and improvement of the selected arrangement. The results of practical execution of the described problem on the Minsk-22 digital computer are presented. There is one illustration and a two-entry bibliography.

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Powder Metallurgy

USSR

UDC 621.791.75.001:537.523.5

STEL'MAKH, G. P., ~~CHESNOKOV, N. A.~~, POGORELOV, V. F., and
SHCHERBAKOV, S. A., Moscow

"Change in Properties of Dispersed Aluminum Oxide During the
Process of Plasma Spheriodization"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 133-137

Abstract: A study was made of the influence of the initial
particle size on the formation of the α , κ , and λ modifica-
tions in the process of plasma spheriodization of dispersed
aluminum oxide. As a result of processing of the aluminum oxide
in an argon plasma, the quantity of volatile impurities in the
spheriodized particles was decreased, while the particle di-
mensions changed only slightly.

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Powder Metallurgy

USSR

UDC 621.791.75.001:537.523.5

STEL'MAKH, G. P., CHESNOKOV, N. A., POGORELOV, V. F., and
SHCHERBAKOV, S. A., Moscow

"Change in Properties of Dispersed Aluminum Oxide During the
Process of Plasma Spheriodization"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 133-137

Abstract: A study was made of the influence of the initial particle size on the formation of the α , β , and γ modifications in the process of plasma spheriodization of dispersed aluminum oxide. As a result of processing of the aluminum oxide in an argon plasma, the quantity of volatile impurities in the spheriodized particles was decreased, while the particle dimensions changed only slightly.

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1/2 041 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--GENERALIZATION OF THE OPERATIONAL CHARACTERISTICS OF A SECTIONAL
PLASMATRON WITH COMPRESSED CHANNELS -U-
AUTHOR--(04)-KOSARENKOV, V.A., RYABTSEV, YE.I., STELMAKH, G.P., CHESNOKOV,
N.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. MEKH. TEKH. FIZ.; NO. 1, 115-8 (JAN-FEB 1970)
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PLASMA ACCELERATOR, VOLT AMPERE CHARACTERISTIC, PLASMA JET,
FLOW VELOCITY, PLASMATRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0214 STEP NO--UR/0207/70/000/001/0115/0118
CIRC ACCESSION NO--AP0127825
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0127825

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VOLT AMPERE CHARACTERISTICS OF A SECTIONED CHANNEL PLASMATRON WERE DETERMINED AT REDUCED PRESSURES. THE VELOCITY OF THE JET MAY BE INCREASED BY INCREASING THE GAS CONSUMPTION, REDUCING THE PRESSURE, AND IMPROVING THE NOZZLE DESIGN. THE JET DIAPHRAGM PLASMATRON STUDIED CONSISTED OF 6 SECTIONS WITH 20 MM DIAMETER AND 20 MM HIGH CHANNELS. THE 4, 8, 12 OR 16 MM NOZZLE WAS ATTACHED AT THE ANODE SECTION; THE ARGON CONSUMPTION WAS VARIED FROM 0.2 TO 3.5 G-SEC. THE EXPERIMENTAL PRESSURE RANGED FROM 1.33 TIMES 10 PRIME2 TO 1.33 TIMES 10 PRIME3 N-M PRIME2, UPON COMPRESSION IN THE CHANNELS, IT VARIED FROM 1.33 TIMES 10 PRIME3 TO 1.33 TIMES 10 PRIME5 N-M PRIME2. THE ENTHALPY OF THE JET WAS CALCULATED FROM THE THERMAL BALANCE OF THE SYSTEM. THE DATA OBTAINED WERE COMPARED WITH GENERALIZED CRITERIAL RELATIONS. THE FOLLOWING CORRELATION WAS OBTAINED: $U \text{ EQUALS } 1.91 I \text{ PRIME NEGATIVE } 0.1 K \text{ PRIME NEGATIVE } 1.0 D \text{ PRIME NEGATIVE } 1.3$, WHEN 10 PRIME2 SMALLER THAN 1 SMALLER THAN 10 PRIME3, 5 TIMES 10 PRIME3 SMALLER THAN K SMALLER THAN 5 TIMES 10 PRIME2, AND 1 SMALLER THAN D SMALLER THAN 5, WHEREBY U WAS DERIVED FROM OHM'S LAW, I FROM THE ENERGY EQUATION AND D REPRESENTS THE RATIO OF THE DIAMETERS OF THE CHANNEL AND THE NOZZLE. UNDER CERTAIN CONDITIONS THE RELATIONSHIP BECOMES $U \text{ EQUALS } 0.6 I \text{ PRIME NEGATIVE } 0.2 K \text{ PRIME NEGATIVE } 1.0 D \text{ PRIME NEGATIVE } 1.3 L \text{ PRIME } 0.65$, WHEN 0.3 SMALLER THAN L 11.0, WHEREBY L IS A GEOMETRIC FACTOR. THE FORMULA ALLOWS ESTIMATION OF THE OPERATIONAL CHARACTERISTICS OF PLASMATRONS.

UNCLASSIFIED

USSR

UDC 612.111.31.014.426

KHOLODNYI, A. Ya., STAVINSKAYA, L. I., and CHESNOKOV, P. T., Blood and Tissue Center, Military Medical Academy imeni S. M. Kirov, Leningrad

"Change in Viability of Erythrocytes Irradiated With Microwaves"

Moscow, Problemy Gematologii i Perslivaniya Krovi, Vol 15, No 7, Jul 70, pp 39-41

Abstract: A study was made of the effect of microwaves on peripheral blood erythrocytes under conditions of extracorporeal circulation. The acid stability of erythrocytes in the blood of irradiated dogs, was determined prior to and after irradiation. The time of stay of Cr^{51} labeled erythrocytes in the vessels was also studied. It was found that irradiation ($\lambda = 12.5$ cm) of the dogs decreased the lifetime of erythrocytes, as evidenced by a reduction in acid stability and a decrease in time of stay in the vessels.

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L/2 006 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--REACTION OF DIMETHYL SULFOXIDE WITH PHENOL IN THE PRESENCE OF
FORMAMIDE AND DIMETHYLFORMAMIDE -U-
AUTHOR-(02)-CHESNOKOV, V.F., BOBKHOVKIN, I.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 733-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SULFUR OXIDE, PHENOL, AMIDE, FORMIC ACID, ORGANIC COMPLEX
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0865 STEP NO--UR/0079/70/040/004/0733/0736
CIRC ACCESSION NO--AP0134594
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134594

ABSTRACT/EXTRACT--(U) GP-0-, ABSTRACT. PHASE DIAGRAMS ARE PRESENTED FOR SYSTEMS OF ME SUB2 SO-ME SUB2 NOCH-PHOH, ME SUB2 SO-HCONH SUB2-PHOH, WITH THE LATTER CONTG. A COMPLEX OF THE 3 COMPONENTS. THE 1ST SYSTEM HAS FOLLOWING TERNARY INVARIANT POINTS: NEGATIVE 82DEGREES AT 18 MOLE PERCENT PHOH AND 11 MOLE PERCENT ME SUB2 SO; NEGATIVE 60DEGREES AT 65PERCENT AND 5PERCENT, RESP.; NEGATIVE 48DEGREES AT 47PERCENT AND 19PERCENT, AND NEGATIVE 63DEGREES AT 35PERCENT AND 28PERCENT, RESP. THE 2ND SYSTEM HAS TERNARY INVARIANT POINTS AS FOLLOWS: NEGATIVE 19DEGREES AT 76 MOLE PERCENT PHOH AND 19 MOLE PERCENT ME SUB2 SO; NEGATIVE 11DEGREES AT 10PERCENT AND 9PERCENT; NEGATIVE 50DEGREES AT 25PERCENT AND 51PERCENT; NEGATIVE 33DEGREES AT 34PERCENT AND 34PERCENT; NEGATIVE 32DEGREES AT 43PERCENT AND 34PERCENT; NEGATIVE 36DEGREES AT 37PERCENT AND 36PERCENT; AND NEGATIVE 43DEGREES AT 3PERCENT AND 31PERCENT, RESP. THE STABILITY OF BINARY COMPLEXES OF ME SUB2 SO WITH PHOH IN THESE TERNARY SYSTEMS INCREASES WHEN HCONH SUB2 IS REPLACED BY HCONME SUB2, OWING TO STRUCTURAL CHANGE RESULTING. FACILITY: ARKHANGEL. LESOTEKH. INST., ARKHANGEL, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—REACTION OF AMIDES WITH PHENOL -U-
AUTHOR—(02)—CHESNOKOV, V.F., BOKHOVKIN, I.M.
COUNTRY OF INFO—USSR
SOURCE—ZH. OBSHCH. KHIM. 1970, 40(3), 528-35
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—AMIDE, PHENOL, ISOTHERM, MELTING POINT, SPECIFIC DENSITY,
SURFACE TENSION, IR SPECTRUM, ORGANIC COMPLEX COMPOUND, POLYMER
DEGRADATION
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0858 STEP NO—UR/0079/70/040/003/0528/0535
CIRC ACCESSION NO—AP0124521
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124521

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM ISOTHERMS OF M.P., VISCOSITY, D., AND SURFACE TENSION (SHOWN) FOR BINARY SYSTEMS OF PHOH OC(NH SUB2)SUB2, PHOH ACNH SUB2, AND THEIR IR SPECTRA, IT WAS SHOWN, IN COMPARISON WITH SIMILAR DATA FOR PHOH ACNME SUB2, WHICH WAS ALSO EXAMD., AS TO COND. VARIATION WITH COMPN., ALONG WITH THE PHOH HCONME SUB2 SYSTEM, THAT COMPLEXES OC(NH SUB2)SUB2 2PHOH, ACNH SUB2 2PHOH AND ME SUB2 NAC 2 PHOH FORM ONLY DURING CRYST. FROM THE LIQ. PHASE. THE DECOMPN. OF THE POLYMERIC ASSOCIATES OF PHOH IN REACTION WITH ACNME SUB2 OCCURS IN CONC. OF THE LATTER THAT IS GREATER THAN MOLE PERCENT AND RESULTS IN A 1:1 COMPLEX. FACILITY: ARKHANGEL. LESOTEKH. INST., ARKHANGELSK, USSR.

UNCLASSIFIED

USSR

UDC 621.382.333.34

YEVSEYEV, YU. A., ~~CHESNOVKOV, YU. A.~~

"Use Of Certain Indirect Parameters During Creation Of A Method Of Nondestructive Tests Of Thyristors"

Preobrazovatel'n. tekhnika. Inform. nauchno-tekhn. sb. (Converter Technology. Information Scientific-Technical Collection), 1970, No 3, pp 18-23 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B431)

Translation: It is shown that as methods of evaluation of the temperature of local overheating of a thyristor structure during its turn-on because of the di/dt effect are absent an indirect method of determining the area of the initially turned-on zone and the average rate of propagation of the conductive state in the structure can be placed at the base of the method of nondestructive tests. L.K.

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1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF ISOBUTYLENE AND ETHYL ALCOHOL IMPURITIES IN ETHYL
CHLORIDE BY A GAS LIQUID CHROMATOGRAPHIC METHOD -U-
AUTHOR-(04)-KUDRYAVTSEVA, N.A., LULOVA, N.I., MARTYNOVA, N.V., CHESNOKOVA,
R.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 58-60
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ISOBUTYLENE, ETHANOL, CHROMATOGRAPHIC ANALYSIS, CHEMICAL
LABORATORY APPARATUS, CHEMICAL PURITY, CHLORINATED ALIPHATIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0542 STEP NO--UR/0065/70/015/003/0058/0060
CIRC ACCESSION NO--AP0119461
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPURITIES GREATER THAN 0.005PERCENT WERE DETD. WITH THE KHL-4 APP. BY USING HE AS CARRIER GAS. ISOBUTYLENE WAS DETD. WITH A 6 M COLUMN PACKED WITH TZK MODIFIED WITH LIQ. PETROLATUM AND SODA, BY USING PROPANE, BUTANE, OR ISOBUTANE AS INTERNAL STDS. ETOH WAS DETD. WITH A 2 SECTION COLUMN, PACKED WITH PEG-400 ON SFEROKHROM-1 (I) FOR THE 2-M SECTION AND 15PERCENT TRICRESYL PHOSPHATE ON I FOR THE OTHER 3 M, WITH A C SUB6 H SUB6 SOLN. IN PHME AS INTERNAL STD.

UNCLASSIFIED

USSR

UDC: 7.84

YAKUTAVICHENE, D. A., ~~CHESNULYAVICHUTE, G. V.~~, SHYAUCHUKENIYENE, V. I.,
MACHULITE, Yu. A.

"Using the Razdan-3 Digital Computer to Keep a Running Account of the Progress and Distribution of Stipends Among Students at Kaunas Polytechnical Institute"

V sb. Vychisl. tekhn. T. 2 (Computer Technology. Vol 2--collection of works), Kaunas, 1971, pp 558-565 (from RZh-Kibernetika, No 1, Jan 72, Abstract No LV1059)

Translation: A solution is found for the problem of keeping a running account of exams at Kaunas Polytechnical Institute. The purpose of the work is to catalog the results of a test session in the profile of groups and summaries which generalize the results of the session in the profile of groups, courses, faculties, and in addition to send out to the deans catalogs of the distribution of stipends by groups, and as a final result of this distribution to transmit pay records of the stipends by groups for the entire coming semester. Authors' resumé.

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AA0051847

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239656 LEAKAGE LOCATOR for compressed air mains contains a differential manometer (5) by which the pressure drop to the leakage point can be measured from the two ends of the mains. The distance to the leakage point can be calculated from the pressuredrop ratio. A four-way cock (4) and reducing valve (1) with strainer (2) complete the equipment.

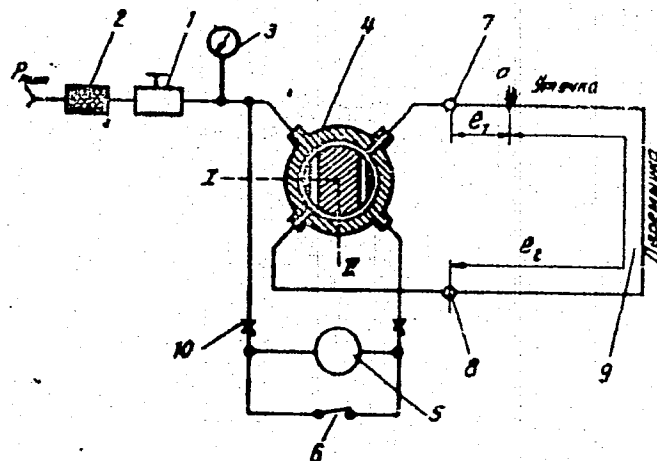
31.7.67 as 1176151/18-24. S.V.CHEGINOI et al.
(28.7.69) Bul 11/18.3.69. Class 42 m². Int.Cl.G 06 d.

AUTHORS: Chestnoy, S. V.; Fadeyev, A. V.; Finkel'shteyn, L. G.

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19820274

AA0051847

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19820275

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1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NEW SHORT WAVE SATELLITES IN THE K ALPHA SPECTRA OF IRON TRANSITION
GROUP ELEMENTS -U-
AUTHOR-(03)-ZHMUDSKIY, O.Z., CHESTNYKH, L.F., ERNIYAZOV, A.S.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1526-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--TRANSITION METAL, EMISSION SPECTRUM, TITANIUM, VANADIUM,
CHROMIUM, IRON, NICKEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0458 STEP NO--UR/0181/70/012/005/1526/1529
CIRC ACCESSION NO--AP0135921
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135921

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EMISSION SPECTRA WERE INVESTIGATED OF TI, V, CR, FE, AND NI. IN ADDN. TO THE KNOWN 6 SATELLITES, 2 NEW PAIRS AND 1 SINGLE SATELLITE WERE OBSD. THE SINGLE SATELLITE IS LOCATED IN THE SHORT WAVELENGTH PART OF THE SATELLITE ALPHA SUB3 PRIME AND 1 PAIR BETWEEN THE SATELLITES ALPHA SUB3 AND ALPHA SUB3 DOUBLE PRIME AND THE 2ND PAIR BETWEEN THE SATELLITES ALPHA PRIME AND ALPHA DOUBLE PRIME. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

AA0044783

Soviet Inventions Illustrated, Section II Electrical, Derwent,

UR 0482

2/70

243219 TENSOMETRIC COMMAND SENDER, designed for the purpose of the remote control by electrical means of an object in a plane-rectangular co-ordinate system, has a point of improvement over other designs in that it enables one operator to control simultaneously both the object concerned and its carrier with an accuracy of no lesser magnitude than that of the two operations separately. The transmission device consists of a thin-walled metal tube and end flange 1, along the stem of which are cemented four diametrically opposed strain gauges 6. The unit is enclosed in a body 5, together with

AUTHORS: Kolosov, A. P.; Timin, R. I.; Chuyev, V. G.; Chesunov, V. V.

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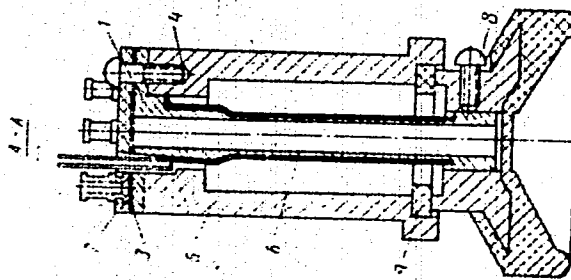
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AA0044783

insulating disc and terminal plate 3,2 by screws 4. The lower end of the body is sealed by the control knob 7, fastened to the gauge tube by screws 8 and seated on a rubber washer 9. The four strain gauges are connected, one each, into an arm of DC bridges, whence the signals pass through parallel units of modulator, amplifier (DC) and demodulator, to two outputs controlling the respective movements of the object. The reduced diameter of 7 serves to limit the bending of the gauge tube at its lower end.

5.7.67 as 1169786/40-23.A.P.KOLOSOV et alia(24.9.69)
Bul 16/5.5.69. Class 42k. Int.Cl.G 01 1.



19771596

USSR

UDC: 532.529

ROSENTHAL', O.M., GANEBNYKH, N.V., CHETIN, F.E. and
KOBALOVA, R.M.

"High-Dispersion Water Aerosol in Electrostatic Field"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz.
Dinamiki Dispersn. Sistem, 1972 (11-th All-Union Conference on Problems
of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972),
1972, p 15 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B1216)

Translation: Calculations were performed of deformations, oscillations and
decomposition of droplets in electrostatic fields as functions of degree of
particle dispersion. Analysis of elliptic deformations is based on an equation
including Negibbs thermodynamic corrections. Extreme dependence of
surface variation on particle volume in constant field was obtained. It is
shown that droplets of $\sim 10^{-4}$ cm radius have the highest stability with
respect to external actions. This result agrees with the actually observed
size of droplets of water aerosol in atmosphere and cloud chambers and makes
it possible to extrapolate the available measurements of the range of droplet
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USSR

ROSENTHAL', O. M., et al., 11-ya Vses. Konf. po Vopr Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 p 15

size to the field of little known high-dispersion aerosol. It is established that Negibbs thermodynamic effects increase sharply the sensitivity of small particles to external electrostatic fields.

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1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DIRIGIBLE FOR GEOLOGISTS -U-
AUTHOR--CHETKAREV, V. C
COUNTRY OF INFO--USSR
SOURCE--SOTSIALISTICHESKAYA INDUSTRIYA, SEPTEMBER 12, 1970, P 4, COLS 4-5
DATE PUBLISHED--12SEP70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, AERONAUTICS, EARTH SCIENCES
AND OCEANOGRAPHY
TOPIC TAGS--DESIGN BUREAU, AUTOMATIC INFLATION DEVICE, LIGHTER THAN AIR
AIRCRAFT, GEOLOGY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1670 STEP NO--UR/0533/70/000/000/0004/0004
CIRC ACCESSION NO--AN0138646

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AN0138646

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRELIMINARY DESIGN OF A DIRIGIBLE, INFLATABLE BY EXHAUST GASES OF ITS OWN ENGINES, HAS BEEN DEVELOPED BY THE LENINGRAD CIVIL DESIGN BUREAU OF DIRIGIBLE CONSTRUCTION IMENI TSIOLKOVSKIY FOR GEOLOGICAL EXPEDITIONARY WORK. ACCORDING TO ENGINEER R. P. STRONG, THE AUTHOR OF THE PROPOSAL, THE SHIP WILL BE ABLE TO CARRY 15 TO 20 PASSENGERS, WILL HAVE ONBOARD LABORATORIES AND STORES OF TECHNICAL EQUIPMENT, AND WILL TRAVEL AT SPEEDS UP TO 200 KM PER HOUR, TO DISTANCES OF 2000 KM. IT WILL NOT NEED SPECIAL MOORING MASTS NOR BALLAST, SINCE IT WILL LOSE ITS LIFTING POWER AS SOON AS ITS ENGINES ARE CUT OFF. ON THE GROUND, WITH ITS SHELL COLLAPSED, IT WILL TRANSFORM INTO A HOUSE. THE LIFTING CAPACITY OF THE PROPOSED SHIP IS 15 TONS.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--FREQUENCY INDEPENDENT FARADAY EFFECT IN DYSPROSIUM AND TERBIUM IRON
GARNETS -U-

AUTHOR--CHETKIN, M.V., SHALYGIN, A.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERC. TELA 1970, 12(2), 503-6

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--GARNET, SINGLE CRYSTAL, IR SPECTRUM, THERMAL EFFECT, TERBIUM
COMPOUND, DYSPROSIUM COMPOUND, FARADAY EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1979/2001

STEP NC--UR/0181/70/012/002/0503/0506

CIRC ACCESSION NC--AP0048279

UNCLASSIFIED

Acc. Nr.

AP0048279

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code

4R0181

105277k Frequency-independent Faraday effect in dysprosium and terbium iron garnets. Chetkin, M. V.; Shalvgin, A. N. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Fiz. Tverd. Tela* 1970, 12(2), 503-6 (Russ). Investigation was carried out of the Faraday effect in oriented single-crystal $Dy_3Fe_5O_{12}$ and $Tb_3Fe_5O_{12}$ in the ir spectral region. The temp. dependence was studied of the Faraday effect in $Dy_3Fe_5O_{12}$. At 80-290°K the Faraday effect is isotropic. A magnetooptic method is proposed for detn. of magnetic crystallographic anisotropy. A. Libackyj

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19792001

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PACKING OF MOLECULES IN CRYSTALS OF ANTHRAQUINONE AND ITS
1,5,DIHALO DERIVATIVES -U-
AUTHOR-(04)-BELSKIY, V.K., CHETKINA, L.A., ZORKIY, P.M., GOLDER, G.A.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 262-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CRYSTAL, ANTHRAQUINONE, MOLECULAR INTERACTION, MOLECULAR
STRUCTURE
CONTROL MARKING---NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1410 STEP NO--UR/0070/70/015/002/0262/0267
CIRC ACCESSION NO--AP0116857
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116857

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERMOL. INTERACTION ENERGY WAS CALCD. BY USING THE ATOM ATOM APPROXN. (A. KITAIGORODSKII AND MIRSKAYA, 1961; ZORKII, ET AL., 1967), AND THESE VALUES WERE USED IN COMBINATION WITH AN ANAL. OF THE INTERMOL. CONTACTS TO COMPARE THE STRUCTURES OF ANTHRAQUINONE AND ITS 1,5,DIHALO DERIVS. THE INTRODUCTION OF EVER BIGGER SUBSTITUTING GROUPS INTO THE MOL. RESULTS IN A SMOOTH CHANGE IN THE STRUCTURE. IN THE 2 EXTREME CRYSTALS (ANTHRAQUINONE AND ITS I DERIV.), THERE IS A SIMILAR MOTIF FOR THE MOL. PACKING, WHICH DIFFERS FROM THE OTHER STRUCTURES. THE RESULTS SHOWS HOW THE GEOMETRIC CHARACTERISTICS OF THE MOL. AFFECT THE MOL. PACKING AND, CONSEQUENTLY, THE PHYS. PROPERTIES. FACILITY: NAUCH. ISSLED. FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

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